

REMARKS

Applicants respectfully request further examination and reconsideration in view of the comments set forth fully below. Claims 1-29 were previously pending. Claims 1-29 have been rejected. Accordingly, Claims 1-29 are now pending.

Rejections Under 35 U.S.C. § 103

Within the Office Action, Claims 1-29 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of U.S. Patent No. 6,678,781 to Domon (hereinafter "Domon"). The Applicants respectfully disagree with this rejection.

Within the background section of the present application, it is taught that

[r]outing devices are one example of devices used to route communications between nodes on different buses. Typically, a node on a first bus sending a packet to a node on a second bus, will send an indirect command to the routing device, which writes to a register space within the routing device and requests the routing device to send the packet to the node on the second bus. When receiving this request from the node on the first bus, the routing device will then reformulate the packet and send it to the node on the second bus. [Present Specification, page 3, lines 21-26]

It is not taught within the background section of the present application that a communication from a first node on a first bus to a second node on a second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node.

Domon teaches a network configuration method for configuring a network of one or more buses. Domon teaches that after configuring each of the IEEE 1394 buses according to the IEEE 1394 standard, a network management node is selected from a first IEEE 1394 bus including at least one node capable of network management. [Domon, Abstract] The first bus is configured to belong to the network management node. [Domon, Abstract] Domon teaches that then an adjacent IEEE 1394 bus of the first IEEE 1394 bus is configured into a configured IEEE 1394 bus to produce an interim network such that the adjacent IEEE 1394 bus belongs to the network management node. [Domon, Abstract] The configuration of the adjacent bus is repeated until no adjacent bus which does not belong to the network management node is left in the network. [Domon, Abstract]

Within the cited sections of Domon, it is taught that a bridge has a portal A and a portal B. [Domon, col. 7, lines 2-3, Figure 4A] Each portal has a node ID consisting of a bus ID and a physical ID, representing the bus to which the portal is coupled. [Domon, col. 7, lines 4-9]

Domon then teaches that “[w]hen a portal receives an asynchronous packet addressed to the same bus ID as the bus ID stored in the routing map thereof, the portal transfers the asynchronous packet to the other portal. The other portal, when receiving the asynchronous packet, sends it to its connected bus” [Domon, col. 7, lines 9-14] Domon then teaches updating and maintaining a network topology map, and routing maps which include the node IDs for routing packets. [Domon, col. 8, lines 52-67] Domon does not teach that a communication from a first node on a first bus to a second node on a second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node. In a communication as taught by Domon only the address of the second node is included. Domon teaches that using the routing map and the included address, the communication is routed to the second node. Domon does not teach addressing a communication to a routing device for another node on another bus.

As described above, the background section of the present application does not teach that a communication from a first node on a first bus to a second node on a second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node. As also described above, Domon does not teach that a communication from a first node on a first bus to a second node on a second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node. Accordingly, neither the background section of the present application, Domon nor their combination teach a communication from a first node on a first bus to a second node on a second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node.

In contrast to the teachings of the background section of the present application, Domon and their combination, within the routing method and apparatus of the present invention, a router is coupled to multiple buses, each of the buses having one or more nodes. It is taught within the present application that a node on a first bus structure sending a communication to a node on a second bus structure includes an address value within the communication address into the address space of the router. When the packet is received, the router then preferably uses a routing value within the address value to determine the bus number and node number of the target node. This remapped address value is then included within the packet and transmitted on the appropriate bus structure directed to the appropriate node. In an alternate embodiment, the address value in a packet received by the router includes a table index value and a direct offset value. As described above, neither the background section of the present application, Domon nor their combination teach a communication from a first node on a first bus to a second node on a

second bus, includes an address value having an address of a routing device, and a routing value used to determine an address of the second node.

The independent claim 1 is directed to a method of routing communications from a first node on a first bus to a second node on a second bus. The method of claim 1 comprises receiving a communication from the first node including an address value having a bus number and a node number, together forming an address of a routing device which is coupled to both the first and second buses, and a routing value used to determine an address of the second node, obtaining the routing value from the communication, remapping the address value of the communication to correspond to the address of the second node utilizing the routing value and transmitting the communication on the second bus to the second node. As described above, neither the background section of the present application, Domon nor their combination teach receiving a communication from a first node on a first bus including an address value having a bus number and a node number, together forming an address of a routing device, and a routing value used to determine an address of the second node on a second bus. For at least these reasons, the independent claim 1 is allowable over the teachings of the background section of the present application, Domon and their combination.

Claims 2-6 are all dependent on the independent claim 1. As discussed above, the independent claim 1 is allowable over the teachings of the background section of the present application, Domon and their combination. Accordingly, the dependent claims 2-6 are all also allowable as being dependent on an allowable base claim.

The independent claim 7 is directed to a direct mapping IEEE 1394 bus packet for communications transmitted from a first node on a first bus to a second node on a second bus. The bus packet of Claim 7 includes an address value having a bus number and a node number, together forming an address of a routing device which is coupled to both the first and second buses, and a routing value used to determine an address of the second node. As described above, neither the background section of the present application, Domon nor their combination teach a communication from a first node on a first bus to a second node on a second bus, that includes an address value having a bus number and a node number, together forming an address of a routing device, and a routing value used to determine an address of the second node. For at least these reasons, the independent claim 7 is allowable over the teachings of the background section of the present application, Domon and their combination.

Claims 8-11 are all dependent on the independent claim 7. As discussed above, the independent claim 7 is allowable over the teachings of the background section of the present

application, Domon and their combination. Accordingly, the dependent claims 8-11 are all also allowable as being dependent on an allowable base claim.

The independent claim 12 is directed to a routing device configured for coupling between a first bus and a second bus for routing communications from a first node on the first bus to a second node on the second bus. The routing device of Claim 12 comprises means for receiving a communication from the first node including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of the second node, means for extracting coupled to the means for receiving for extracting the routing value from the address value within the communication, means for remapping coupled to the means for extracting for utilizing the routing value to remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the second node and means for transmitting coupled to the means for remapping for transmitting the remapped communication on the second bus to the second node. As described above, neither the background section of the present application, Domon nor their combination teach receiving a communication from a first node on a first bus to a second node on a second bus, that includes an address value having a bus number and a node number, together forming an address of a routing device, and a routing value used to determine an address of the second node. For at least these reasons, the independent claim 12 is allowable over the teachings of the background section of the present application, Domon and their combination.

Claims 13-17 are all dependent on the independent claim 12. As discussed above, the independent claim 12 is allowable over the teachings of the background section of the present application, Domon and their combination. Accordingly, the dependent claims 13-17 are all also allowable as being dependent on an allowable base claim.

The independent Claim 18 is directed to a routing device configured to couple between a first bus and a second bus to route communications from a first node on the first bus to a second node on the second bus. The routing device of Claim 18 comprises a receiving circuit configured to receive a communication from the first node, the communication including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of the second node, a parsing circuit coupled to the receiving circuit to extract the routing value from the address value within the communication, a remapping circuit coupled to the parsing circuit to obtain the routing value from the parsing circuit and remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the second node

and a transmitting circuit coupled to the remapping circuit and configured to transmit the remapped communication with the remapped address on the second bus to the second node. As described above, neither the background section of the present application, Domon nor their combination teach a communication from a first node on a first bus to a second node on a second bus, that includes an address value having a bus number and a node number, together forming an address of a routing device, and a routing value used to determine an address of the second node. For at least these reasons, the independent claim 18 is allowable over the teachings of the background section of the present application, Domon and their combination.

Claims 19-23 are all dependent on the independent claim 18. As discussed above, the independent claim 18 is allowable over the teachings of the background section of the present application, Domon and their combination. Accordingly, the dependent claims 19-23 are all also allowable as being dependent on an allowable base claim.

The independent Claim 24 is directed to a network of devices. The network of devices of Claim 24 comprises a first bus including a first plurality of nodes, a second bus including a second plurality of nodes and a routing device coupled to the first bus and the second bus. The routing device comprises a receiving circuit configured to receive a communication from one of the first plurality of nodes, the communication including an address value having a bus number and a node number, together forming an address of the routing device, and a routing value used to determine an address of a targeted one of the second plurality of nodes, a parsing circuit coupled to the receiving circuit to extract the routing value from the address value within the communication, a remapping circuit coupled to the parsing circuit to obtain the routing value from the parsing circuit and remap the address value of the communication thereby forming a remapped communication with a remapped address value corresponding to the address of the targeted one of the second plurality of nodes and a transmitting circuit coupled to the remapping circuit and configured to transmit the remapped communication with the remapped address on the second bus to the targeted one of the second plurality of nodes. As described above, neither the background section of the present application, Domon nor their combination teach a communication from a first node on a first bus to a second node on a second bus, that includes an address value having a bus number and a node number, together forming an address of a routing device, and a routing value used to determine an address of the second node. For at least these reasons, the independent claim 24 is allowable over the teachings of the background section of the present application, Domon and their combination.


Claims 25-29 are all dependent on the independent claim 24. As discussed above, the independent claim 24 is allowable over the teachings of the background section of the present

application, Domon and their combination. Accordingly, the dependent claims 25-29 are all also allowable as being dependent on an allowable base claim.

For the reasons given above, Applicants respectfully submit that the claims are now in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
HAVERSTOCK & OWENS LLP

Dated: October 27, 2004

By: 
Jonathan O. Owens
Reg. No. 37,902
Attorneys for Applicant(s)

CERTIFICATE OF MAILING (37 CFR § 1.8(a))

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

HAVERSTOCK & OWENS LLP.

Date: 10-27-04 By: 